Chapter 21 HAMMERS, MALLETS AND MAULS

HOW TO CHOOSE AND USE THEM

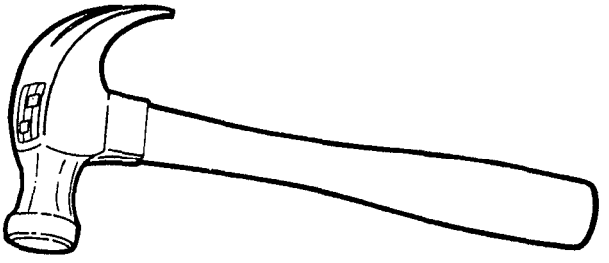
The “Types and Uses” pages provide you with a list of the more common types of hammers. These pages should help you select the right hammer for the job.

The “Care and Safety” pages tell you how to keep your tools in proper condition and how to use them safely.

The “Using Hammers” pages tell you how to perform a specific task using the carpenter’s, machinist’s, and soft-faced hammers.

There are many more uses for these hammers, however. By becoming familiar with the uses outlined, you will build a good background for using any hammer.

The “Repair” pages tell you how to replace a wooden handle.



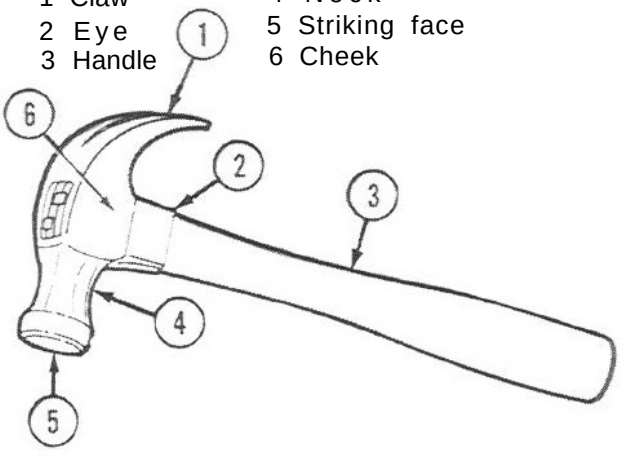
INDEX

TYPES AND USES

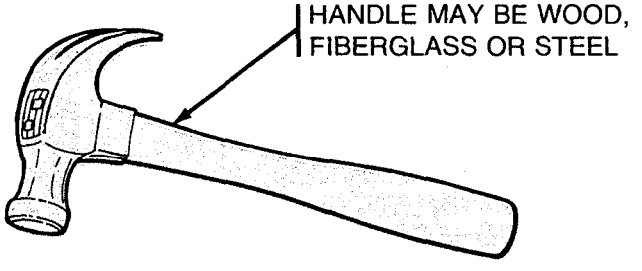
TYPES AND USES

Parts of a hammer are as follows:

1 Claw
2 Eye
3 Handle
4 Neck
5 Striking face
6 Cheek

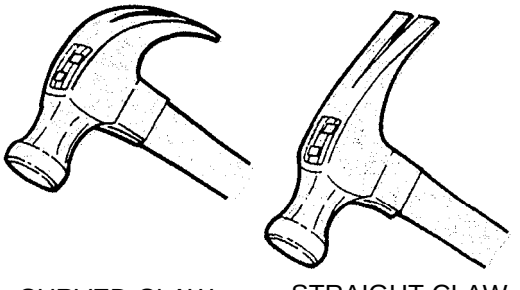


CARPENTER'S HAMMER



The carpenter's hammer is used for driving and pulling nails and tapping wood chisels.

There are two types of claws,



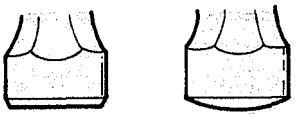
CURVED CLAW STRAIGHT CLAW

CAUTION

Never use a claw hammer on a steel punch or on hardened steel-cut or masonry nails. The face is too soft and could chip.

Be sure to check for a loose head or a cracked handle before use.

And there are two types of striking faces.



FLAT FACE BELL FACE

NOTE

When using a flat-faced hammer to drive a nail, the nail head must be square with the face of the hammer at time of impact. The bell-faced hammer offers a uniform face to the nail head even though the hammer face is slightly tipped at time of impact.

Hammers come in 7, 13, 16 and 20 ounce sizes. Your selection should be based upon the following: flat face for rough work, or bell face for finishing work where you don't want dents in the finish.

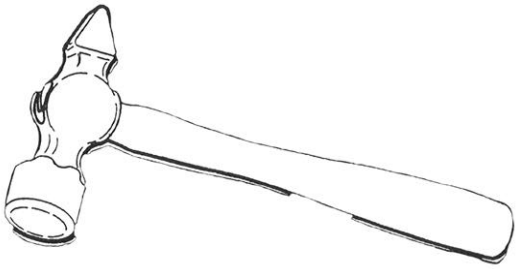
The straight claw is generally used for ripping and framing. The curved claw is preferred for general use.

MACHINIST'S PEEN HAMMER

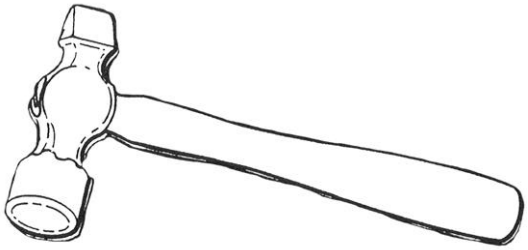
All machinists peen hammers have a flat striking face on one end of the head for striking punches and chisels. The other end of the head can be one of the following:

A ball peen hammer is used for forming soft metal, peening rivet heads, and striking metal in out-of-the-way places.

TYPES AND USES - Continued

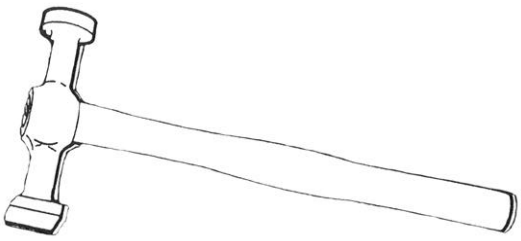


A cross peen hammer is used as a chisel for removing rivet heads and for stretching or bending metal.



A straight peen hammer is used like the cross peen but differs from the cross peen since its peening edge is turned ninety degrees. This keeps the handle parallel to the struck surface.

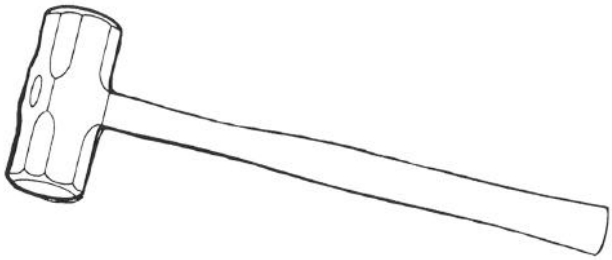
BUMPING BODY HAMMER



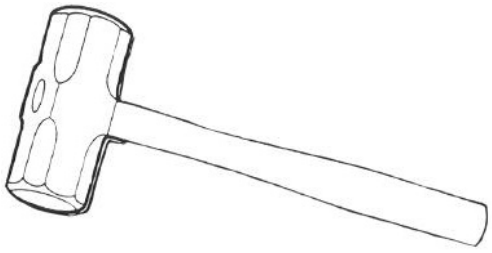
A bumping body hammer is used to straighten and form metal.

BLACKSMITH'S OR SLEDGE HAMMERS

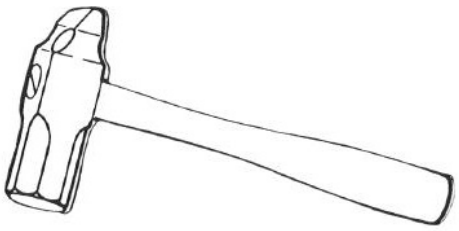
Blacksmith's or sledge hammers are used for striking punches and chisels, for breaking stones and concrete, and for setting timbers. These hammers, although similar to the machinist's hammers, give the user the advantage of a heavier head and a longer handle.



A double face sledge hammer has similar faces on both sides of the head.



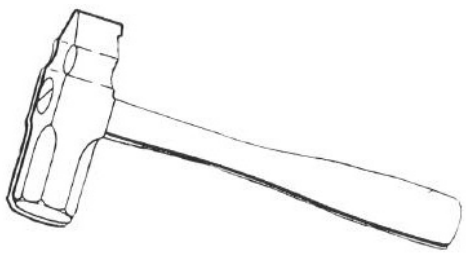
The club hammer is a heavy double-faced demolition hammer. It is primarily used to break up masonry.



Cross peen hammers have a broad flat face on one side of the head and a peening chisel edge on the other side.

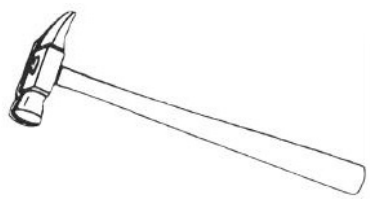
TYPES AND USES - Continued

BLACKSMITH'S OR SLEDGE HAMMERS (Cont)



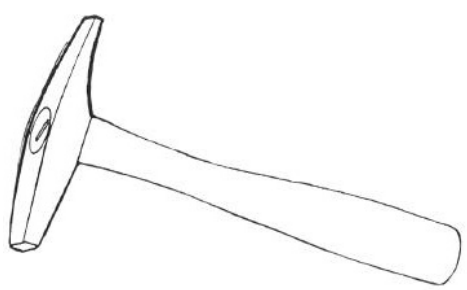
The straight peen is similar to the cross peen except that its peening edge is turned ninety degrees. This keeps the handle parallel to the struck surface.

JEWELER'S HAMMER



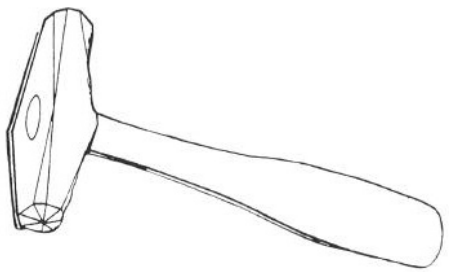
The jeweler's hammer has a lightweight head weighing between 1-3/4 and 2 ounces. It is used to drive pins and shafts from precision instruments.

MASON'S HAMMER



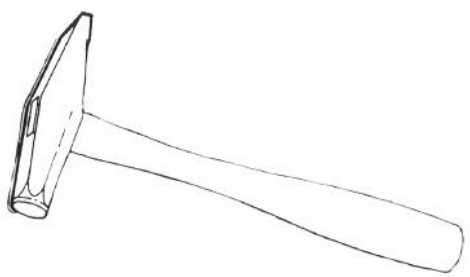
The mason's hammer has a flat striking face on one end of the head and a tapered chisel on the other end. It is used for setting and cutting bricks and flat stones.

NAPPING HAMMER



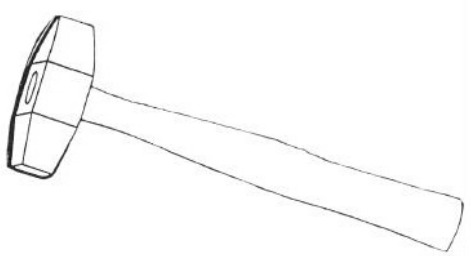
The napping hammer has a high carbon steel head with two tapered faces and weighs about 3 pounds. It is used for chipping stone surfaces or for forming stones during road construction or similar stone work.

RIVETING HAMMER



The riveting hammer has a round face on one end of the head. It is used for peening rivet heads. The other end has a tapered chisel which is used for upsetting rivets.

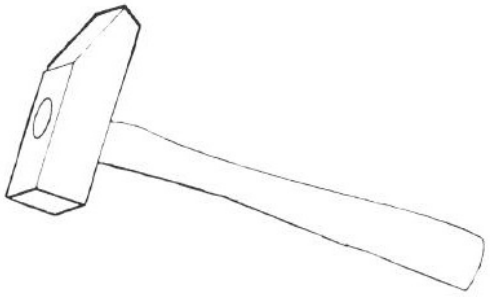
SAWMAKER'S HAMMER



The sawmaker's hammer has a tapered blunt face on one end of the head and a tapered chisel face on the other end. It is used for setting the teeth on saws when a setting tool is unavailable.

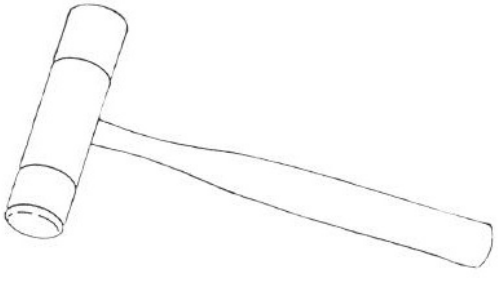
TYPES AND USES - Continued

SETTING HAMMER



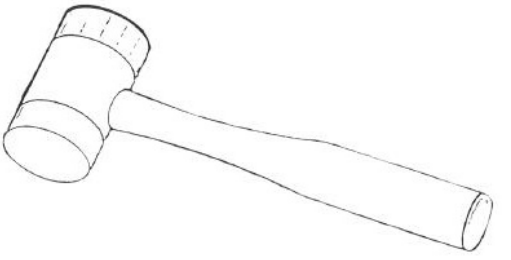
The setting hammer has a square flat face on one end of the head and a sloping beveled edge on the other end. It is used in sheet metal work for leveling and bending edges and for setting double seams.

SOFT-FACED HAMMER



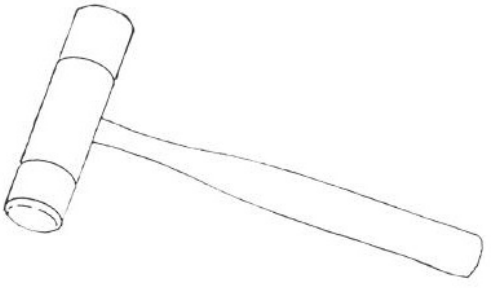
Soft-faced hammers are capable of delivering heavy blows to machined, highly polished or soft surfaces without damaging the surface.

LEAD OR COPPER HAMMER



Lead or copper hammers are usually used for aligning steel surfaces. Copper hammers range in head weight from 8 ounces up to 3 pounds. Working surfaces of lead and copper hammers may be filed to restore even faces. Molds are available for repouring lead hammers.

INSERTED SOFT-FACED HAMMER



Inserted soft-faced hammers provide the user with a dual purpose hammer. Any two faces may be assembled on a single handle holder. The following tables will assist you in selecting the proper face hardness for the task you are attempting:

Hardness		Symbol	Color
soft		S	Brown
Medium		M	Red
Tough		T	Green
Medium	Hard	N	Cream
Hard		H	Black
Extra Hard		XH	Yellow

Faces and handle holders are available in 1 inch, 1-1/2 inch, 2 inch, 2-1/2 inch and 3 inch diameters.

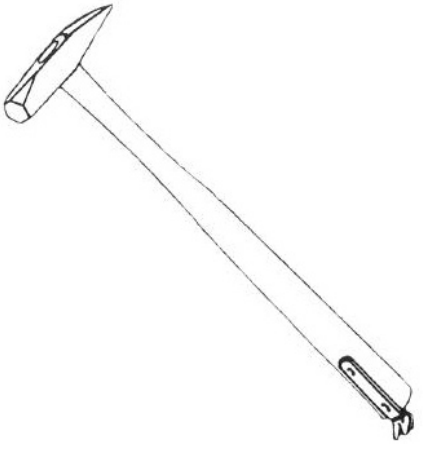
TYPES AND USES - Continued

INSERTED SOFT-FACED HAMMER (Cont)

USE THIS CONVERSION CHART FOR FACE SELECTION

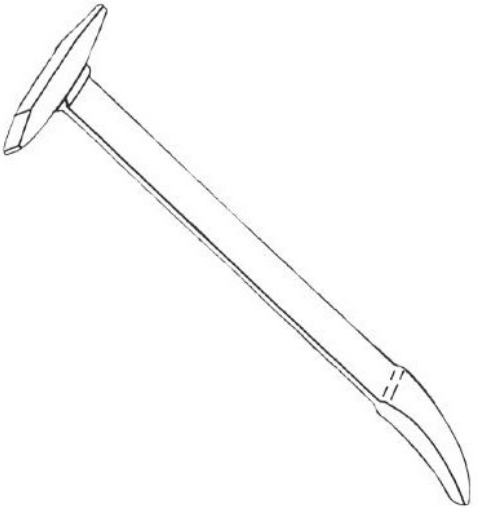
Type	Soft	Medium	Tough	Medium Hard	Hard	Extra Hard
Soft Rubber	S					
Wood	S	M		N		
Rubber		M				
Hard Wood			T			
Lead			T	N		
Plastic			T		H	
Rawhide		M	T	N	H	XH
Micarta					H	XH
Fibre					H	XH
Copper						XH

TRIMMER'S HAMMER



The trimmer's hammer has a round flat face on one end of the head and has a tapered chisel face on the other end. A claw is attached on the end of the handle and is used for pulling tacks. It is used for installing tacks and brads.

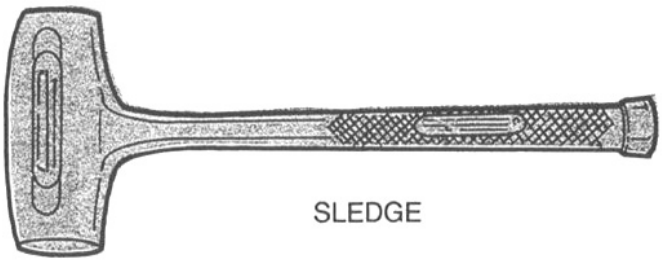
WELDER'S HAMMER



The welder's hammer has one or two tapered chisel faces. Those having only one tapered face have a replaceable brush attached. The hammer face is used for chipping welds, while the brush is used for cleaning welds and brushing away the slag chipped from the weld.

TYPES AND USES - Continued

DEAD BLOW HAMMERS



The dead blow hammer is a shot-filled, rubber encased, single-piece hammer. It features a wrap-around grip and a flanged butt. Four basic types of dead blow hammers are currently in use. They are: the standard head, slimline head, sledge, and ball peen. Some advantages of the dead blow hammers are greater striking power, and the elimination of broken heads and splintered handles.

MALLETS

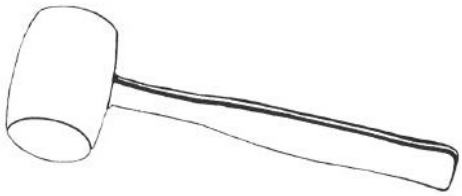
CARPENTER'S MALLET

The carpenter's mallet has a cylindrical wooden head often bound with thin metal bands for support. It is used for driving dowels, small stakes, wooden handled chisels and for forming and shaping sheet metal.

RAWHIDE MALLET

The rawhide mallet has a cylindrical head which is made by tightly wrapping and staking a sheet of leather. It is used for forming and shaping sheet metal.

RUBBER MALLET



The rubber mallet has a cylindrical rubber head. It is used for forming sheet metal, driving dowels, and small stakes.

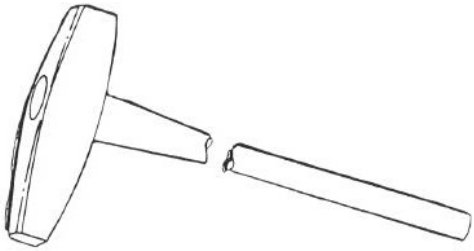
TINNER'S MALLET

The tinner's mallet has a cylindrical wooden head which is from 1-1/4 to 3-1/2 inches in diameter and from 3 to 6 inches in length. It is used to form and shape sheet metal.

TYPES AND USES - Continued

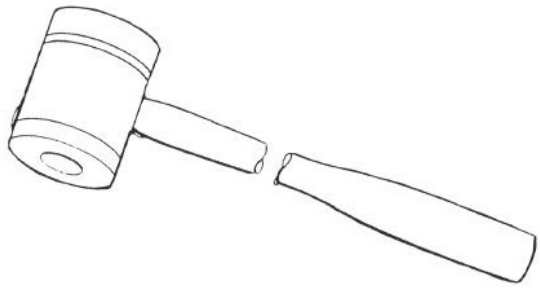
MAULS

RAILROAD TRACK MAUL



The railroad track maul has a flat faced tapered head which weighs about 10 pounds. They are used for driving railroad track spikes.

WOODEN MAUL



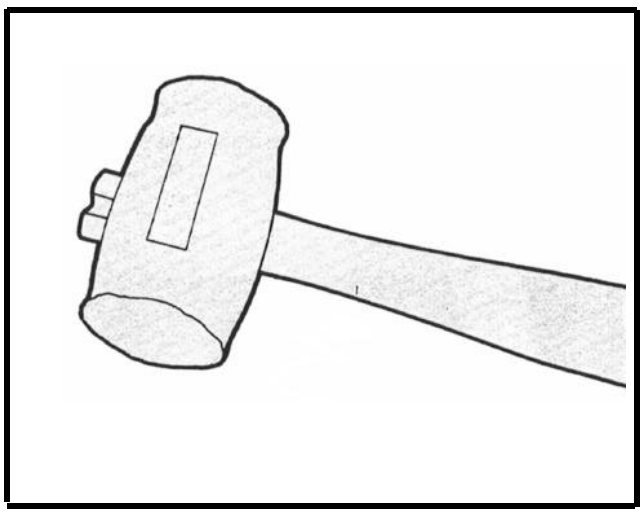
The wooden maul has a cylindrical head which is about 8 inches in diameter and about 10 inches long. It is used to drive wooden pickets, posts and stakes.

SAFETY

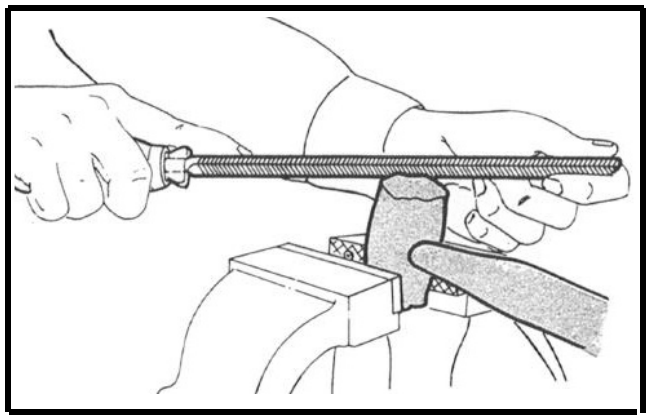
WARNING

NEVER, NEVER USE AN UNSAFE HAMMER. BEFORE USING, CHECK FOR A LOOSE HEAD OR A CRACKED HANDLE. DO NOT USE HANDLE AS A PRY BAR, OR TO KNOCK SHARP EDGES TOGETHER.

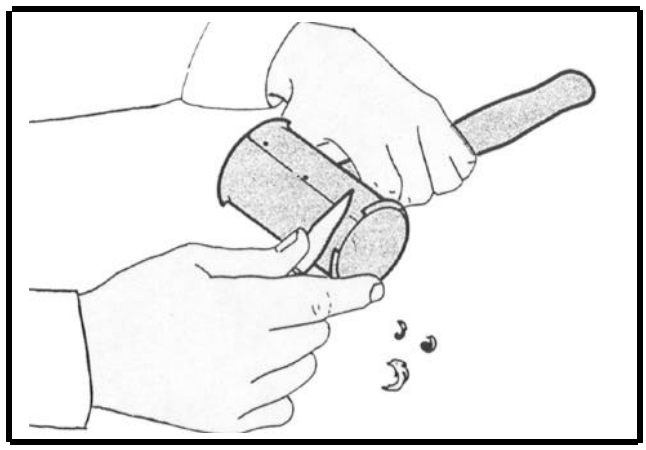
1. Inspect the faces of steel hammers for wear, dents, or chips. They can be dangerous if chips fly off.
2. Replace the hammer if these conditions are found.



3. Inspect copper, lead, plastic, or rawhide mallets for "mushrooming."



4. File edges of copper, lead or plastic mallets down to the original shape.

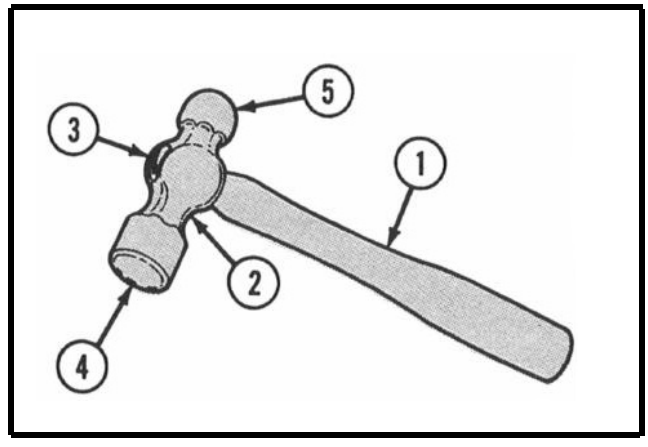


5. Trim a rawhide mallet with a knife.

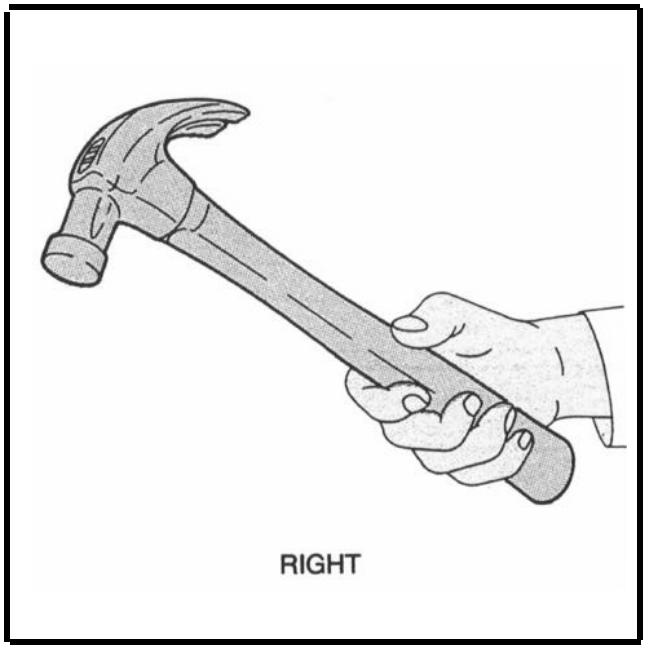
SAFETY - Continued

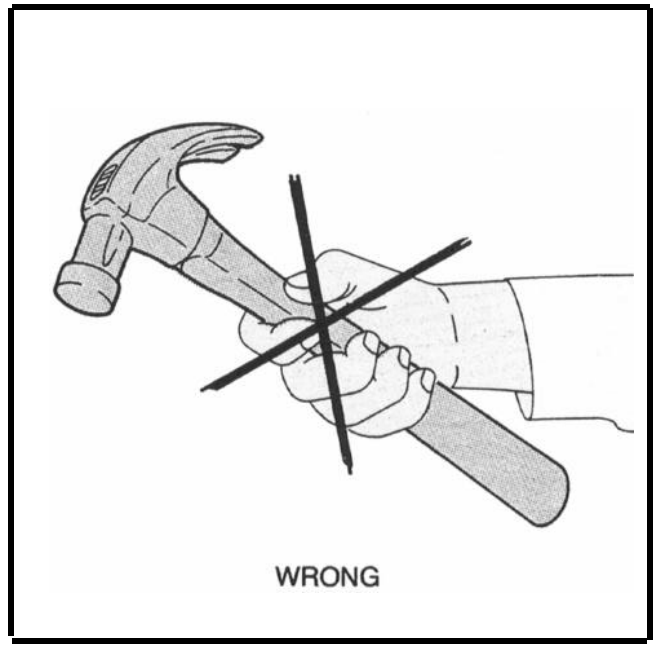
Specific Steps to Take

1. Make sure handle (1) is tight in head (2).
   Do not tape a cracked handle.
   REPLACE IT.
2. Make sure wedges (3) are in handle (1), keeping head (2) tight on handle.
   USE ONLY CORRECT WEDGES.
3. Make sure striking face (4) and ball peen (5) are free of oil.



USING HAMMERS





The proper way to hold any hammer is near the end of the handle. The handle is shaped for gripping without slipping from your grasp at this position, and gives the best control and impact with least effort. Strike nail or tool squarely and on center to prevent the hammer from glancing off.

The wrist and arm motion depends on the power of the impact required. Small nails require light blows almost entirely from a wrist motion. Heavy blows, needed, to drive a large nail or other similar task, come from the wrist, forearm and shoulder.

USING A CARPENTER'S HAMMER

WARNING

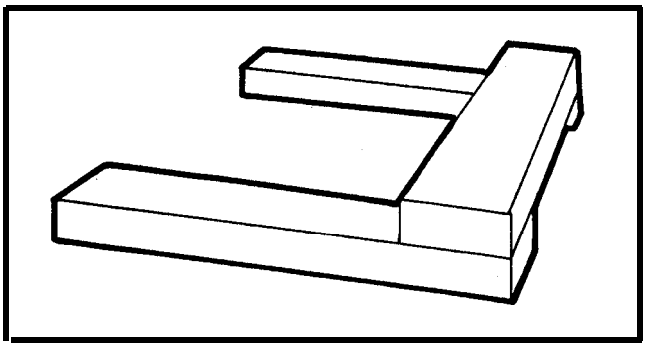
WEAR EYE PROTECTION AND WATCH THE FINGERS.

CAUTION

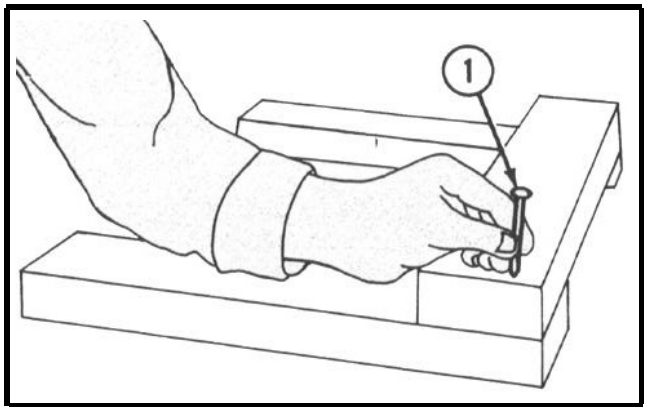
Never use a claw hammer on a steel punch or on hardened steel-cut or masonry nails. The face is too soft and could chip.

Be sure to check for a loose head or a cracked handle before use.

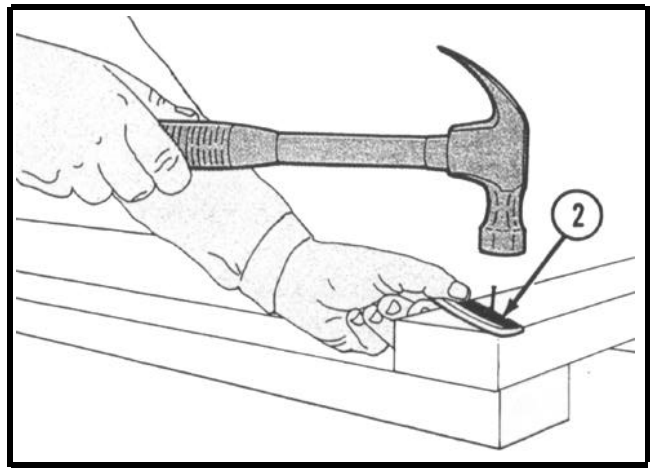
The following set-up is established to provide practice driving nails successfully.



1 Lay two pieces of wood parallel to each other. Place a third piece on top and align so that the edges are even.

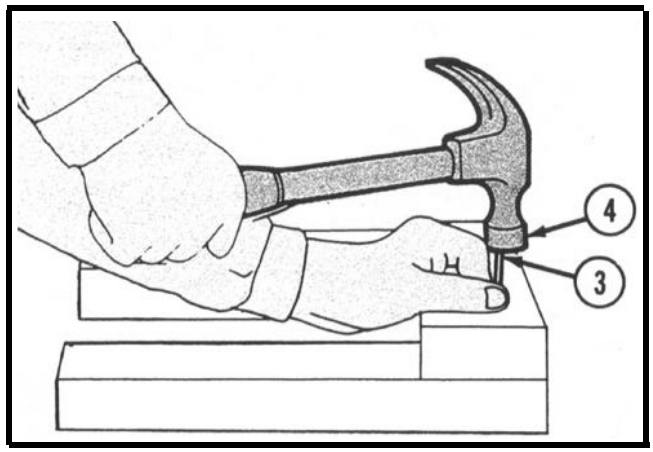


2 Support a common nail (1) between thumb and first finger about halfway up the nail.

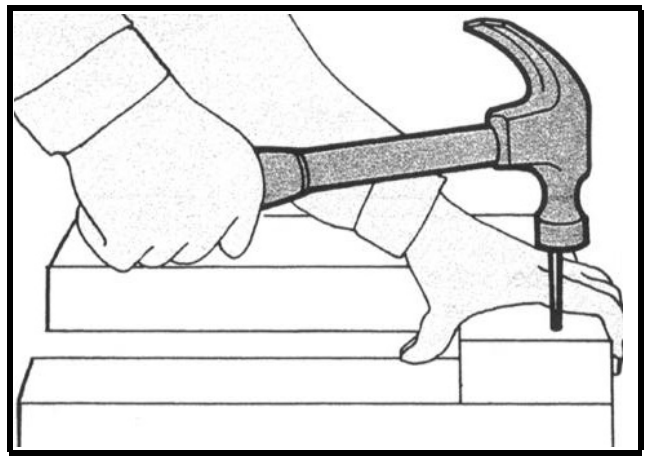


NOTE

A piece of paper or a comb (2) can be used to hold small nails.

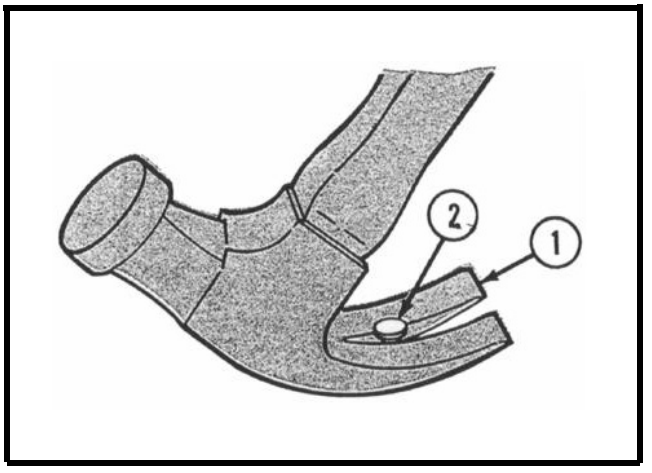


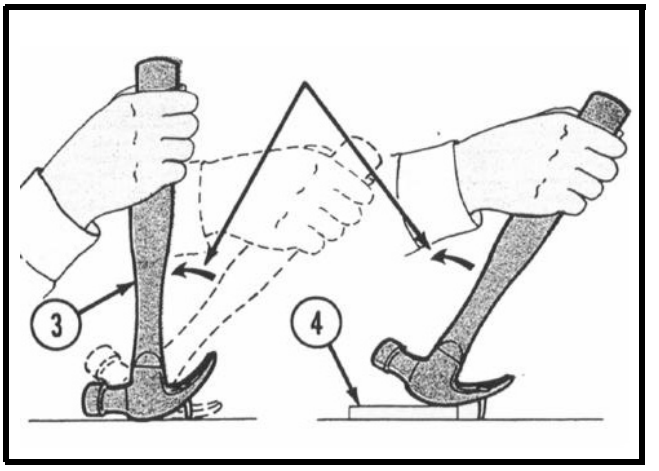
3 Tap nail head (3) with hammer face (4) until the nail will remain standing by itself.



4 Remove fingers and drive nail flush. Make sure the hand supporting the work is not in direct line with the hammer blows.

USING A CARPENTER'S HAMMER - Continued



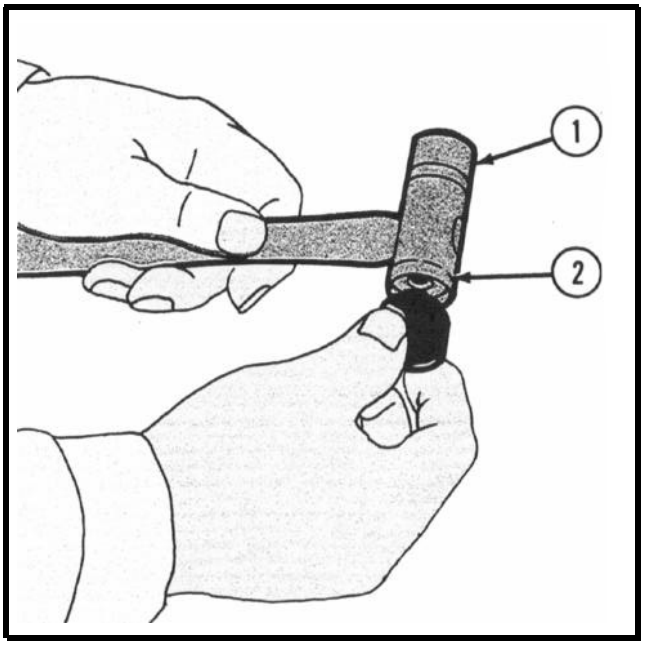


1 The claw end (1) of the hammer is for pulling nails or prying boards. Slip the claw under the nail head (2) as far as it will go, to prevent bending the head up.

2 Pull the handle (3) to a vertical position to withdraw the nail.

3 For longer nails, place a block of wood (4) under the head for better leverage.

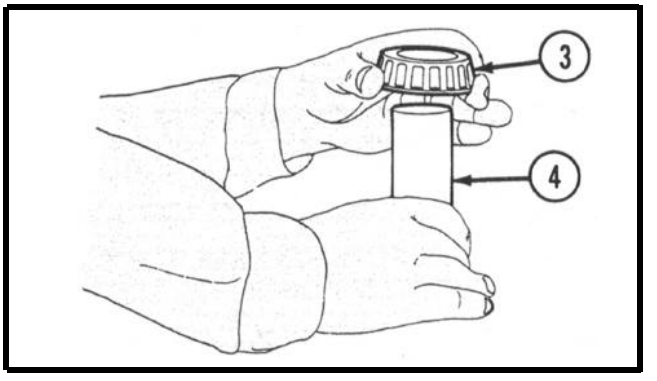
USING AN INSERTED FACE HAMMER



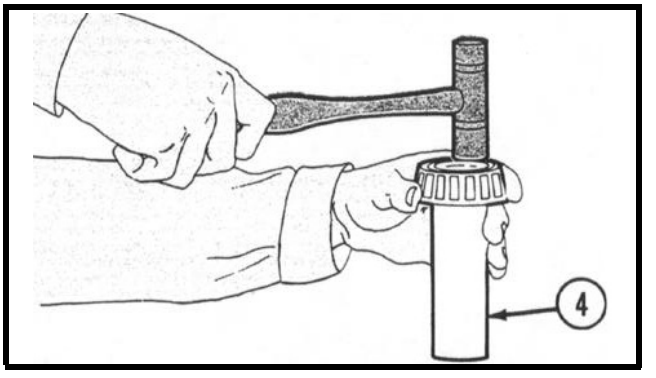
NOTE

The following procedure is only one of many uses of a soft-faced hammer.

1 Make sure faces (1) are tight in holder (2).

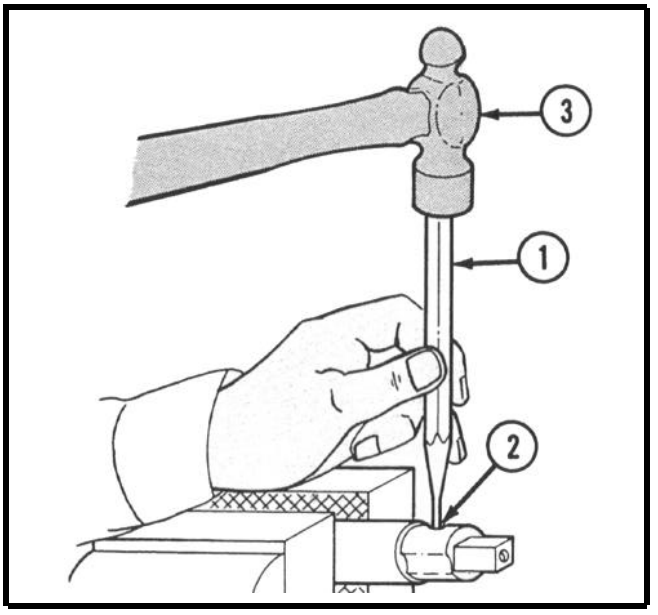


2 Unwrap bearing (3) and center over shaft (4).



3 While supporting bearing with left hand use soft-faced hammer to tap in a circular motion until edge of bearing is flush with shaft (4).

USING A MACHINIST'S BALL PEEN HAMMER



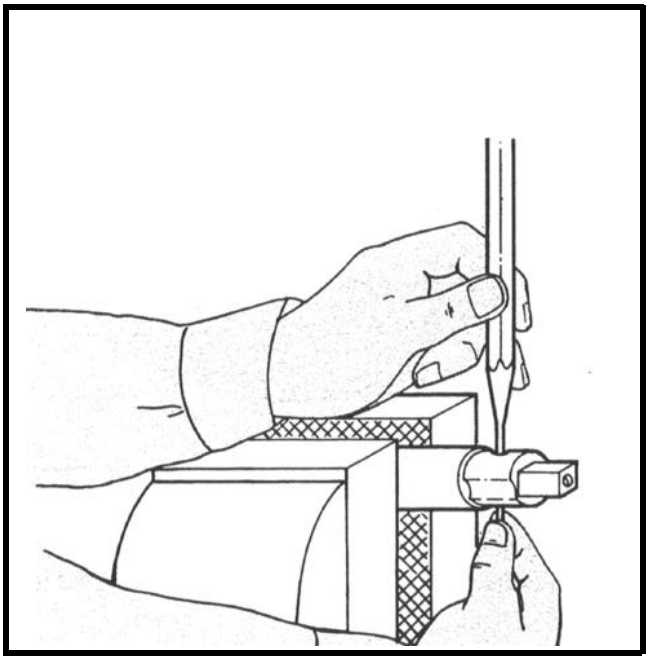
The following procedure is one of many uses of the machinist's hammer.

1 To remove a spring pin from a shaft, select a drift punch about the same diameter as the pin and a machinist's hammer having a face larger than the punch head.

2 Hold punch (1) in your left hand centered over pin (2), tap punch lightly with hammer (3). This should move the pin.

NOTE

It may be necessary to apply penetrating oil to the pin before it will move.



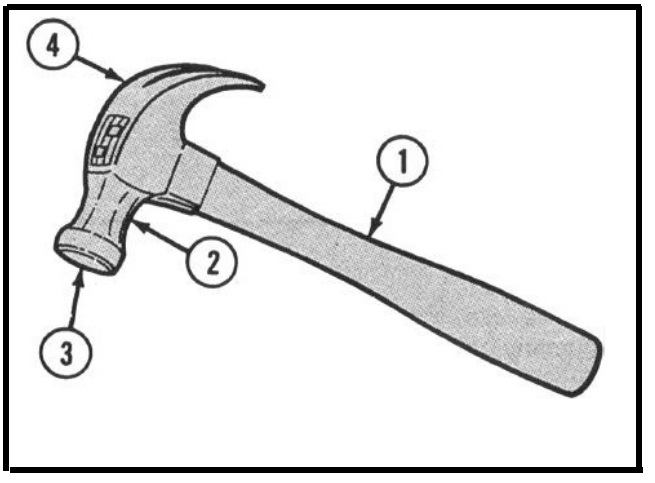
3 Catch the pin in your right hand before it falls out of the shaft.

NOTE

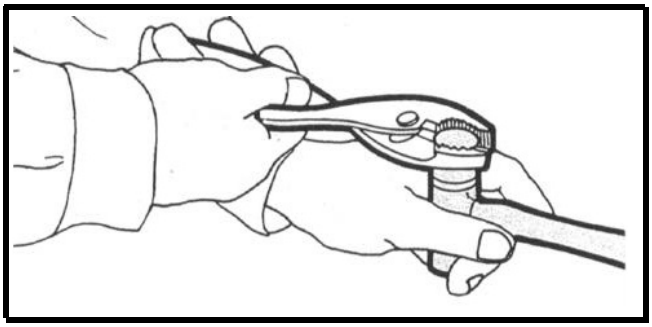
After the pin is about half way out of the shaft, you should not hold the punch.

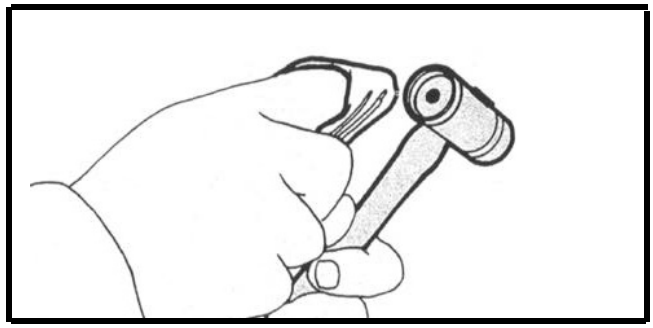
CARE OF HAMMERS

1. Check for cracks in handle (1). Replace handle if cracked. Check for loose head (2). Replace missing or makeshift wedges to be sure head is tight. If not tight, replace handle.
2. Periodically rub a small amount of linseed oil into the wood handles (1) to prevent the wood from drying out and shrinking.
3. Replace hammer if it has a worn or chipped face (3) or claw (4).
4. Lightly lubricate metal parts when storing the hammer for a lengthy period.
5. Wipe oil and grease from rubber mallets to prevent damage to rubber.



CARE OF INSERTED FACE HAMMERS





1. Broken or chipped faces may be removed by turning in a counterclockwise direction.

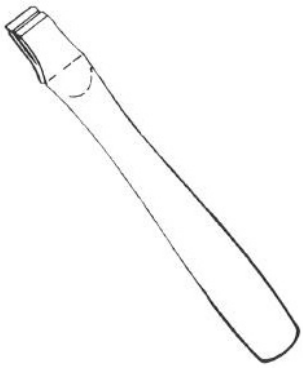
NOTE

Use a pair of pliers or a rag on broken faces to prevent scraping your hands.

2. Wipe out face seat on holder with a clean rag. Install new face by turning in a clockwise direction.
3. If holder is broken or cracked, remove both faces by turning in a counterclockwise direction.
4. Obtain a new holder and install faces by turning in a clockwise direction.

REPLACING THE HANDLE

MATERIALS **ASSORTED WEDGES** **TOOLS**

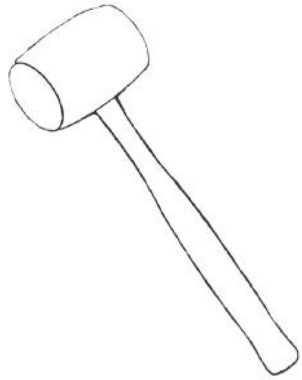


NEW HANDLE

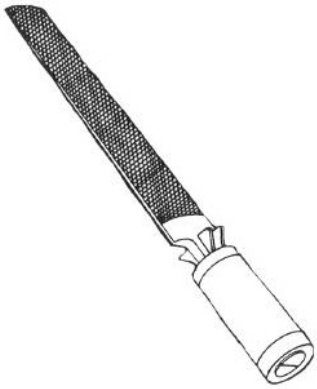
WOODEN WEDGE

METAL WEDGE

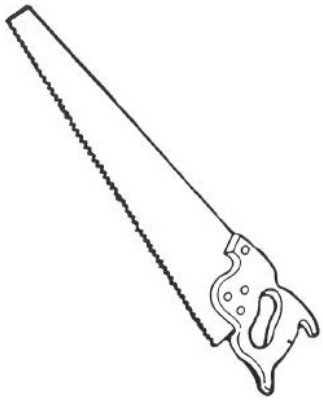
HAMMER



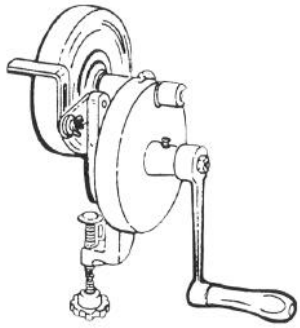
RUBBER MALLET



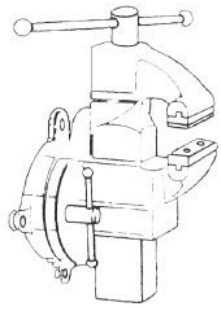
WOOD RASP



HAND SAW



BENCH GRINDER



VISE

The above items are the basic materials required to replace the handle on a typical carpenter's hammer.

REPLACING THE HANDLE - Continued

REMOVING OLD HAMMER HANDLE

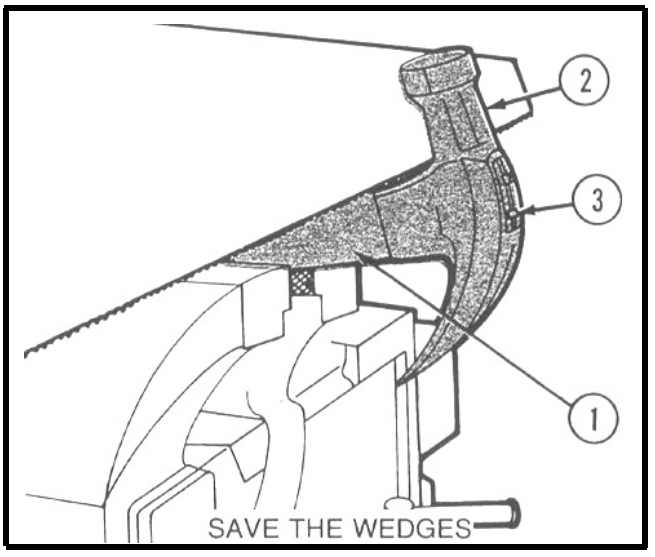
1 If the handle is split or broken, remove it from the head.

2 If the handle is too tight to pull loose from the head, proceed as follows:

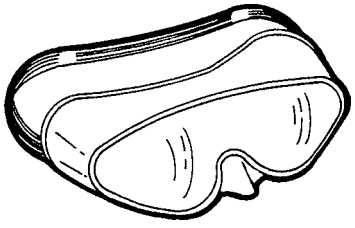
Place hammer in vise.

Saw off handle (1) close to head (2).

Drive the remaining handle out through the large end of the head (3) using drift pin. Save the wedges.

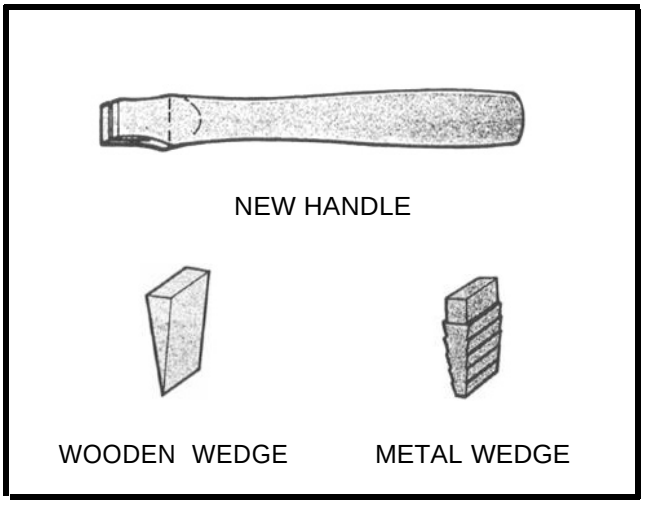


INSTALLATION OF NEW HANDLE

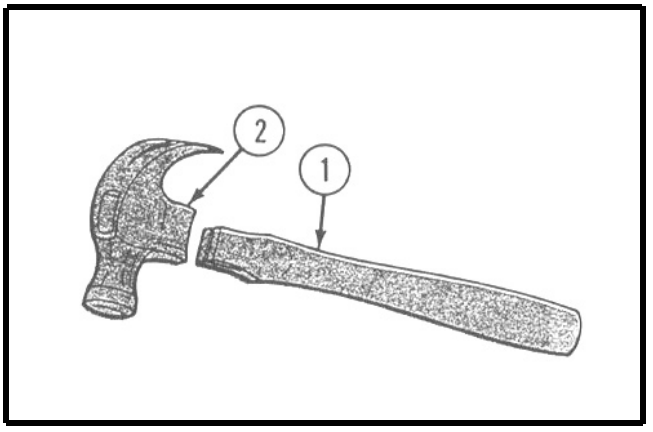


WARNING

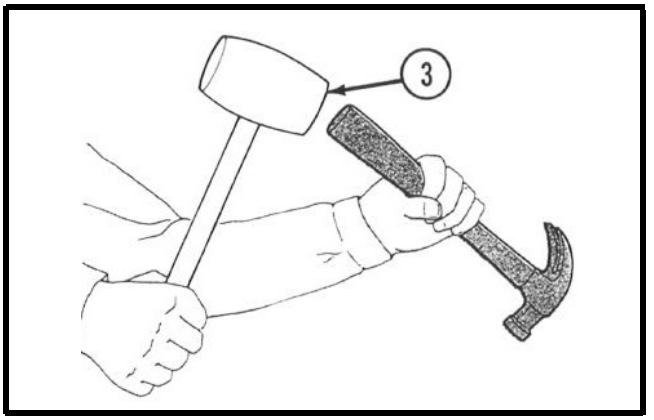
WEAR EYE PROTECTION AND WATCH THE FINGERS.



1 Obtain new handle and wedges.

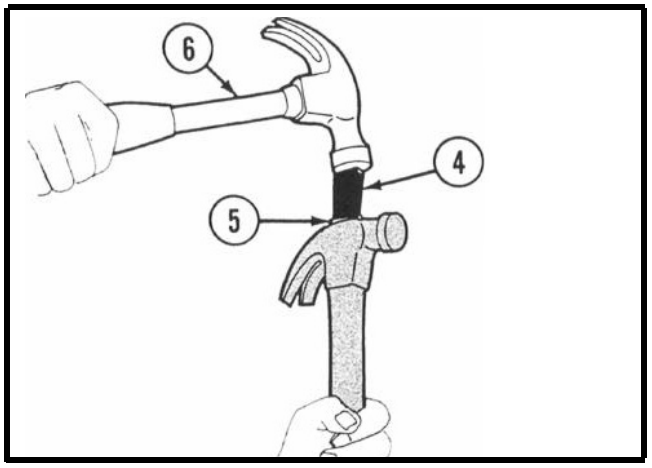


2 Insert handle (1) in head (2).

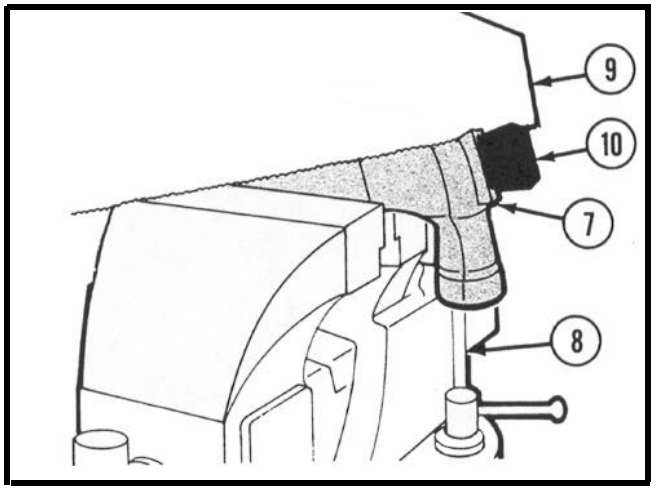


3 Seat handle in head with a rubber mallet (3).

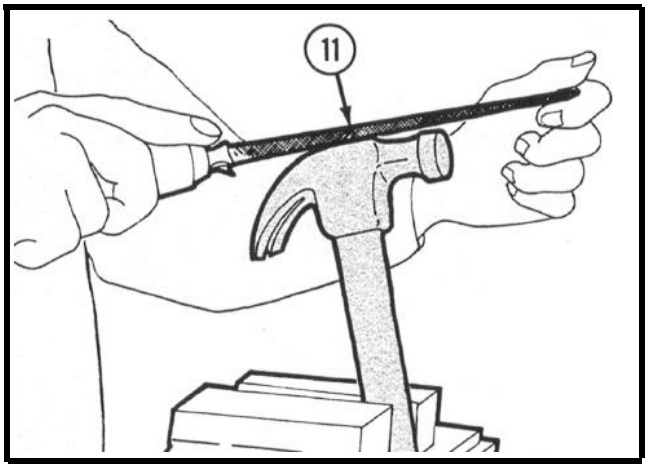
REPLACING THE HANDLE - Continued



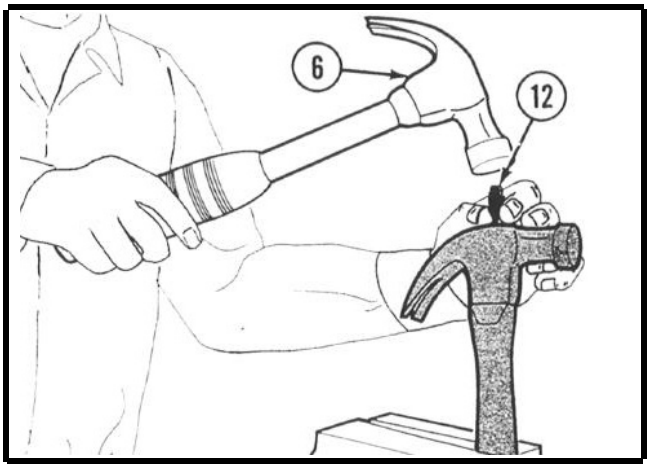
4 Drive wooden wedge (4) in handle face (5) with hammer (6).



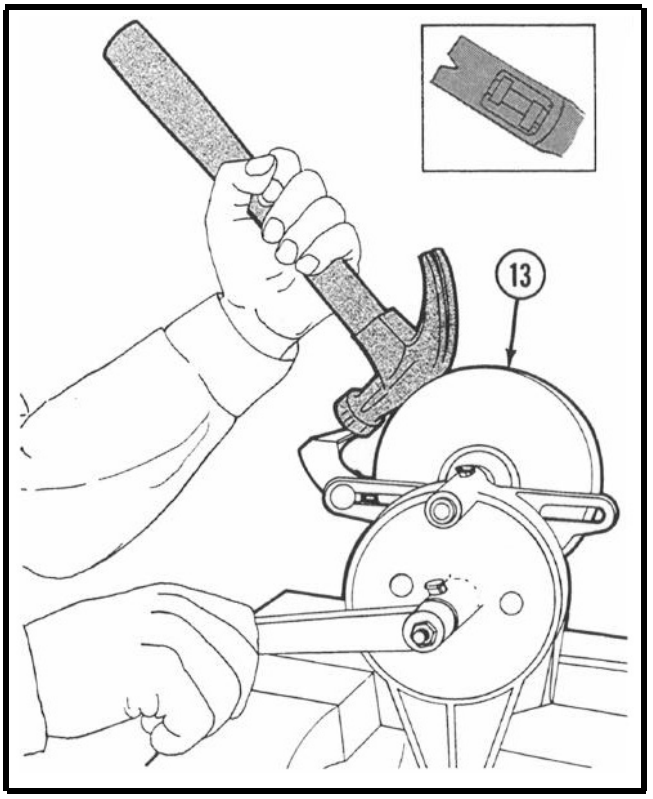
5 Place hammer (7) in vise (8). Using handsaw (9) remove projecting end of wedge (10).



6 Remove excess portion of wedge using wood rasp (11).



7 Select metal wedge (12) and drive into wooden wedge with hammer (6):



8 Remove excess portion of wedge using a bench grinder (13). Check handle. If its tight, the task is complete.

If handle is loose, repeat procedure.